

## WHAT IS CLAIMED IS:

### 1. A pavement recycling assembly, comprising:

a frame having left and right side plates, a top plate, and an open bottom for contacting a pavement surface, said frame defining a mixing chamber and an opening in said top plate in communication with said mixing chamber;

a flat anvil disposed at a forward end of said frame for engaging said pavement surface;

a laterally-extending toothed grinding drum rotatably mounted in a grinding chamber in said frame behind said anvil and ahead of said mixing chamber for breaking up and grinding said pavement;

means for rotating said grinding cylinder;

means for introducing fluid asphalt into said frame;

at least one laterally-extending toothed rotatable mixing wheel disposed in said mixing chamber for forming a mixture of said fluid asphalt and said ground pavement;

means for rotating said mixing wheel; and

a screed assembly disposed behind said mixing chamber for extruding said mixture at a desired height so as to form a pavement.

2. The pavement recycling assembly of claim 1 wherein said means for introducing fluid asphalt comprises at least one row of spray nozzles.

3. The pavement recycling assembly of claim 2 wherein said row of spray nozzles is disposed above said opening.

4. The pavement recycling assembly of claim 1 wherein first and second laterally-extending toothed rotatable mixing wheels are disposed in said mixing chamber.

5. The pavement recycling assembly of claim 1 wherein the vertical position of said grinding drum is adjustable relative to said frame to change the depth of cut of said grinding drum.

6. The pavement recycling assembly of claim 5 wherein said anvil is movable longitudinally relative to said frame.

7. The pavement recycling assembly of claim 6 wherein said anvil is coupled to said grinding cylinder such that said anvil moves rearward as said grinding drum is moved upward and said anvil moves downward as said grinding drum is moved downward.

8. The pavement recycling assembly of claim 1 further comprising a heater disposed in said frame behind said grinding drum from heating said ground pavement.

9. The pavement recycling assembly of claim 1 further comprising a vertically adjustable material control gate disposed in said frame behind said mixing chamber for controlling the amount of material flowing into said screed assembly.

10. A pavement recycling machine, comprising:  
a wheeled chassis; and  
a pavement recycling assembly suspended under said chassis, said chassis being selectively movable vertically and laterally relative to said chassis, said recycling assembly comprising:  
a frame having left and right side plates, a top plate, and an open bottom for contacting a pavement surface, said frame defining a mixing

chamber and an opening in said top plate in communication with said mixing chamber;

a toothed grinding cylinder rotatably mounted in a grinding chamber in said frame ahead of said mixing chamber for breaking up and grinding said pavement;

means for rotating said grinding cylinder;

at least one spray nozzle for introducing fluid asphalt binder into said frame;

at least one toothed rotatable mixing wheel disposed in said mixing chamber for forming a mixture of said fluid asphalt binder and said ground pavement;

means for rotating said mixing wheel; and

a screed assembly disposed behind said mixing chamber for extruding said mixture at a desired height.

11. The pavement recycling machine of claim 10 wherein said means for introducing fluid asphalt comprises at least one row of spray nozzles.

12. The pavement recycling machine of claim 11 wherein said row of spray nozzles is disposed above said opening.

13. The pavement recycling machine of claim 10 wherein first and second laterally-extending toothed rotatable mixing wheels are disposed in said mixing chamber.

14. The pavement recycling machine of claim 10 wherein the vertical position of said grinding drum is adjustable relative to said frame to change the depth of cut of said grinding drum.

15. The pavement recycling machine of claim 14 wherein said anvil is movable longitudinally relative to said frame.

16. The pavement recycling machine of claim 15 wherein said anvil is coupled to said grinding cylinder such that said anvil moves rearward as said grinding drum is moved upward and said anvil moves downward as said grinding drum is moved downward.

17. The pavement recycling machine of claim 10 further comprising a heater disposed in said frame behind said grinding drum from heating said ground pavement.

18. The pavement recycling machine of claim 10 further comprising a vertically adjustable material control gate disposed in said frame behind said mixing chamber for controlling the amount of material flowing into said screed assembly.

19. The pavement recycling machine of claim 10 further comprising a feed hopper for receiving supplemental pavement, and a conveyor from moving said supplemental pavement from said feed hopper to said opening of said mixing chamber.

20. The pavement recycling machine of claim 10 further comprising a feed hopper for receiving supplemental pavement, and a conveyor from moving said supplemental pavement from said feed hopper to said grinding chamber.

21. An in-situ method of recycling asphaltic pavement comprising the steps of:

providing a pavement recycling assembly comprising:

a frame having left and right side plates, a top plate, and an open bottom for contacting a pavement surface, said frame defining a mixing chamber and an opening in said top plate in communication with said mixing chamber;

a toothed grinding cylinder rotatably mounted in a grinding chamber in said frame ahead of said mixing chamber for breaking up and grinding said pavement;

means for rotating said grinding cylinder;

at least one spray nozzle for introducing fluid asphalt binder into said frame;

at least one toothed rotatable mixing wheel disposed in said mixing chamber for forming a mixture of said fluid asphalt binder and said ground pavement;

means for rotating said mixing wheel; and

a screed assembly disposed behind said mixing chamber for extruding said mixture at a desired height;

breaking up and grinding a selected area of asphaltic pavement using said grinding drum;

introducing fluid asphalt to said ground pavement; and

creating a mixture of said fluid asphalt and said ground pavement using said mixing wheels; and extruding said mixture through said screed to create a pavement.

22. The method of recycling asphaltic pavement of claim 21 further comprising:

suspending said pavement recycling assembly under a chassis so that it is laterally movable relative to said chassis; and

selectively moving said pavement recycling assembly laterally left or right relative to said chassis so that said recycling assembly is aligned with a pavement surface to be recycled.

23. The method of recycling asphaltic pavement of claim 22 further comprising:

providing a hopper mounted to said chassis for receiving supplemental asphaltic pavement; and

introducing supplemental pavement from said hopper into said mixing chamber along with said ground pavement and said fluid asphalt.

24. The method of recycling asphaltic pavement of claim 22 further comprising:

providing a hopper mounted to said chassis for receiving supplemental asphaltic pavement; and

introducing supplemental pavement from said hopper into said grinding chamber.

25. The method of recycling asphaltic pavement of claim 21 further comprising heating said ground pavement.

26. The method of recycling asphaltic pavement of claim 21 further comprising selectively limiting the quantity of asphalt which passes from said mixing chamber to said screed assembly.